

# General recommendations for EU China water innovation

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results of the project PIANO

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# What have we observed? Some broad insights



- Europe has many water innovations to offer China and has strong history of water innovation
- Strong drivers for water technology and innovation in China, and fast growth of innovations/ technologies from Chinese firms
- Rich history of EU-China water cooperation, strong current partnerships and networks in water/environment sector
- Mechanisms for research cooperation and exchanges have opened, improved and are more functional
- Multiple objectives of cooperation and their synergies vs. trade-offs not always clear



# Productive vs effective cooperation



- Rich history of productive cooperation on water in EU-China AND will continue via e.g. CEWP.
- Key question: How to define effective cooperation moving forward?
  - Economic growth and commercial opportunities?
  - Sustainability?
  - Political relations equity?
  - Knowledge advancement?



# Water innovation cooperation opportunities



## LEARN

- **Knowledge exchange and dialogue** where challenges are generic to the sector and shared by both sides:
  - Policy and regulatory coherence to drive innovation
  - Models for PP and PPPs to stimulate innovation and uptake of new technologies
  - Public procurement processes as innovation drivers

## EARN

- **Matchmaking/brokering and innovation hubs**
  - Expand and improve existing support systems and networking for matchmaking and business services for EU solution providers with highly viable, market ready technology.
  - Increase investment to address brokering capacity gap and business model for brokering services.

## INCUBATE & INNOVATE

- **Demonstration pilots and incubation facilities** in China, which can later be scaled in Europe and further across the country if successful:
  - The priority technologies and solutions to be developed and tested can be driven by supply and demand, but can also be guided by the proposed topical structure of the PIANO SRIA.



# Investment pathways for Water Cooperation

Highest Commercial opportunity

## Prioritize doing business and making money now

*Primary objective: **GROWTH AND COMPETITIVENESS***  
Optimize return in public investment to enable European water companies to bring technologies into market.  
*Weakness:* Scope of potential innovations to be tested will be limited, influence upon and learning from Chinese science/policy dialogues lessen over time.

## Prioritize both, expand China bound cooperation and business support investment

*Primary objective: **EXPANSION***  
Maximize return on all objectives in China.  
*Weakness:* Requires more resources to invest

Lowest priority on science and diplomacy

## Reduce or maintain current activities for business support, science and policy cooperation

*Primary objective – **RESOURCE REALLOCATION/SAVING***  
Focus on European and other markets considered easier for uptake and development of water innovations.  
*Weakness:* Reduces potential for innovation development, uptake and commercial opportunities for Europe in China

Highest priority on science and diplomacy

## Challenge-driven: Valuing innovation potential, science diplomacy as priority outcome for cooperation

*Primary objective: **INNOVATION AND INFLUENCE***  
Develop, innovate and test solutions to water challenges applicable in Europe, China and globally.  
*Weakness:* Translation of investment in European innovation and science into commercial opportunities for EU business less certain/efficient and may be 'hit-or-miss'.

Lowest Commercial opportunity



# Recommendations for improved cooperation



*Improve by optimizing and expanding existing structures and practices*

- 1. Consider water as a formal component of future EU-China RIA agenda**
- 2. Better exploit existing RIA infrastructure**
- 3. Improve connections between member states and Chinese RIA infrastructure**
- 4. Coordinate EU water innovation support systems with Chinese counterparts**
- 5. Align visions with the Global Goals, and consider future collaborations on global water innovation challenges**



# Recommendations for improved cooperation



*Develop a two track water technology innovation strategy for Europe in China, and a two track water innovation dialogue*

**Track 1:** Support commercialization of water technologies with high TRL that can compete within the Chinese market, through more investment in **brokering and business support**

- Expanding and improving existing support systems and networking for matchmaking and business services for EU solution providers with highly viable, market ready technology.
- High TRL + viable commercial potential.
- Addressing brokering capacity gap and also valuation/business model for brokering services:

**Track 2:** Support for innovation with mid-level TRL through **pilots/demonstration and incubation** (decision point on weight of commercial viability)



# Two track framework for water innovation dialogue



## **Track 1:** Dialogue of water policy drivers of innovation

- Primary objective is learning on both sides
- Operates at EU and member state level.
  - Regulatory coherence and knowledge exchange over impacts of reforms on water management, innovation, and water sector business.

## **Track 2:** Dialogue on innovation policy drivers relevant for water

- Separate internal process for dialogue on joint issues: IPR, Water Innovation Strategy, Procurement, FYP for STI, etc., and issues for EU lobbying, positioning
- Maintain processes for dialogue for standards/ Standardization issues with improved input provided (if assessed as needed).





# Summary Recommendations

1. **EU and its member states should build upon existing networks, institutions and partnerships for EU-China water cooperation: CEWP, ASEMWater, ENRICH/DRAGONSTAR+**
2. **EU should consider adding or integrating a two track water technology innovation promotion strategy in China**
3. **EU and its member states can support this strategy within its wider EU-China water cooperation, and facilitate effective dialogues on innovation and water.**
4. **Overall implementation of this strategy would focus on four main areas: (1) brokering and support services for commercialization of EU water technologies; (2) demonstration pilots and incubation facilities (driven by the PIANO SRIA); (3) knowledge exchange and dialogue water/environmental policy drivers for water innovation; and (4) Dialogue on innovation policy drivers relevant for water.**
5. **Moving forward, there is need to review priority objectives and trade-offs for investment in support for innovation development or immediate commercial opportunities.**
6. **Current networks, dialogues and strategies need to consider and adapt to Chinese government restructuring**





Thank you!

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# Framework conditions for uptake of water innovation in Europe and China



General challenges are well known in EU, generally similar worldwide (EIP Water 2014):

- Lack of funds for SMEs
- Risk Aversion of the water sector
- Lack of demonstration sites
- Policy and regulatory inconsistency in and between countries
- Fragmentation of actors in the water sector
- Conservative procurement tendencies



# Framework conditions for uptake of water innovation in Europe and China



## **EIP Water Action Areas:**

- Fit for purpose financial instruments
- Improved coherence in EU regulatory landscape
- Structured approaches to PP and PPPs
- Increased showcases and demonstration sites (to improve investor confidence)
- Studies on how public procurement can drive innovation



# Challenges in framework conditions for science, technology and innovation cooperation between Europe and China



IPR issues

Technology transfer rules/practice perceived as discouraging

Visa policies

Standardization

Access to Chinese STI financing from European actors



# Consider water as a formal component of future EU-China RIA agenda



- Significant existing scientific cooperation in the field of water, e.g. China Europe Water Platform/ ASEMWater.
- Focus could be placed on the domain areas outlined in the PIANO SRIA document
- The multi-actor partnership programs financed by the European Partnership Instrument provides strong basis for implementation which could be catalytic for wider cooperation if coordinated closely with bi-lateral cooperation agendas across Europe.
- Over 2018-2019, a key challenge and opportunity will be engage a wider set of Ministries and government actors, particularly from the Ministry of Environment and Ecology, Ministry of Natural Resources and Ministry of Science and Technology.



# Better exploit existing RIA infrastructure



- Built through existing support mechanisms for EU-China cooperation on water and integration into other EU-China collaboration platforms (CEWP; DragonSTAR; ASEM Water; EU-China Sustainable Urbanization Partnership; EU-China Climate Agreement; EU-China SME Center; 3ipet at Ministry of Environmental Protection, China, Isle (TAG Europe); EU Gateway to China: Environmental and Water Technologies; and EURAXESS (among others).
- Improving links to other major flagship EU-China SRIA initiatives relevant to water innovation should also be a priority. The dialogues on food, agriculture and bioeconomy as well as on environment, climate and sustainable urbanization are potentially most relevant.
- The Urban JPI and Water JPI may consider joint dialogues, coordination meeting regarding innovation within e.g. sponge city development.
- Demonstration and uptake of water TWIs could be featured within, City-Industry-Science Partnerships and innovations within climate resilient planning (particularly for water shortage and floods) could be enhanced (as primary focus is on energy and mitigation dimensions).



# Improve connections between member states and Chinese RIA infrastructure



- Facilitating a linkage to enable participation (supported by Chinese funding) to join actions from EU initiatives is important and should be expanded. While mechanisms exist, synergies can be better exploited by facilitating exchange between participants and coordination of resources.
- Member states should also be encouraged to walk on two legs by working through EU programmes as well as with the national agencies. This is done by developing new specific partnerships between RIA institutions at member state level to facilitate bi-lateral mutually beneficial programming.





# Coordinate EU water innovation support systems with Chinese counterparts



- There are several existing hubs in China to support procurement of water technology solutions from Europe and internationally (3iPET at MEP-FECO; MWR-Science and Technology Cooperation Office; ASEMWater at MOST) and from private capital investment firms.
- Many of these cannot yet operate this type of match-making to meet the scale of potential market demand. Face challenges to properly sort/ access sufficient information on which technological solutions exist, their quality, and their fit to local conditions.
- They also face challenges to compel European technology providers to engage their time and resources into what can be considered relatively high risk and uncertain ventures.
- Increased focus on match-making led at city or province level may hold greater opportunities than the national hubs solely led by Chinese government authorities.
- Linkage between EIP Water groups and Chinese innovation hubs may provide further opportunity to stimulate joint innovation development and knowledge exchange.

